times, or oftener, as they find neceſſary. The whole is concluded with a gentle purge, tho' the waters themſelves are of a laxative nature.

There is another ſpring in the town of the ſame nature, but not ſo warm, as the Brudel: it is called the Mill-ſpring, and is only tepid. Thoſe of a warm or weak conſtitution make uſe of this inſtead of the other, both for drinking and bathing.

There are likewiſe ſeveral chalybeat ſprings in the neighbourhood of Carlſbad; one at half a mile, and the other at two leagues diſtance from the town. Both of them ſeem to reſemble the water of the Pohun ſpring at Spa; but are not near ſo ſtrong. They do not uſe them medicinally on the ſpot; but they are brought to Carlſbad, and ſold, in order to be drank with their wine. I am,

My Lord,

With the greateſt reſpect,

Your Lordſhip's

Moſt obedient humble Servant,

Jeremiah Milles.

Groſvenor-ſtreet,
Jan. 19th, 1757.

V. *An Eſſay towards aſcertaining the ſpecific Gravity of living Men.* By *Mr.* John Robertſon, *F. R. S.*

Read Jan. 27, 1757.

SOME time laſt autumn I had occaſion to draw up a few examples on the uſe of a table of the ſpecific gravities and weights of

of ſome bodies. Among other things, that occurred then to me, I thought it might be uſeful to know the ſpecific gravity of men. In order to make ſome experiments on this ſubject, I got a ciſtern made, of 78 inches in length, 30 inches wide, and 30 inches deep: it was conſtructed as near a parallelopiped as the workman could, to prevent tedious operations in computing the horizontal ſections of the ciſtern by the ſurface of the water. I then endeavoured to find ten perſons, ſuch as I propoſed to make the experiments withal; namely, two of ſix feet high, two of five feet ten inches, two of five feet eight inches, two of five feet ſix inches, and two of five feet four inches. One of each height I propoſed ſhould be a fat man, and the other a lean one; but I could not ſucceed in procuring ſuch men; and, after waiting till near the middle of October, I was obliged to put up with ſuch, as would ſubmit themſelves to the experiment at that ſeaſon of the year. They were all labouring men, belonging to the ordinary of Portſmouth yard, and, except one or two of them, who were middling ſized men, were for the moſt part very thin and ſlim made perſons. I had alſo provided a ſliding meaſure to take their heights, and ſcales to weigh them in. Every thing being prepared, each man ſtript himſelf in an adjoining room, and put on a pair of trowſers for decency's ſake: his height was firſt taken, then his weight, and then he immerſed (fortified with a large dram of brandy). A ruler, graduated to inches, and decimal parts of an inch, was fixed to one end of the ciſtern, and the height of the water noted before a man went in, and to what height it roſe when he ducked himſelf under

under its ſurface; and of theſe ſeveral obſervations is the following table compoſed.

N°.	Heights. Ft.	Heights. In.	Wt. Pds.	Ht. Water before immerſed. Inches.	Ht. Water when immerſed. Inches.	Water raiſed. Inches.	Solidity.	Weight Water. Pounds.
1	6	02	161	19,30	21,20	1,90	2,573	160,8
2	5	10 3/8	147	19,25	21,16	1,91	2,586	161,6
3	5	9 1/2	156	19,21	21,06	1,85	2,505	156,6
4	5	6 3/4	140	19,17	21,21	2,04	2,763	172,6
5	5	5 7/8	158	19,13	21,21	2,08	2,817	176,0
6	5	5 1/2	158	19,09	21,26	2,17	2,939	183,7
7	5	4 3/8	140	19,05	21,06	2,01	2,722	170,1
8	5	3 1/8	132	19,01	20,86	1,85	2,505	156,6
9	5	4 1/8	121	18,97	20,76	1,79	2,424	151,5
10	5	3 1/4	146	18,93	20,66	1,73	2,343	146,4

In making of theſe experiments, I remarked ſome inconveniencies, which I did not at firſt advert to, and which, at that time, I could not prevent. I intended, that each man ſhould have got gently into the water, immerſed himſelf all but his head, and ſo have ſtaid until the motion of the water had ceaſed; then he was ſuddenly to have ducked his head under, and have continued ſo a few ſeconds of time, until I had noted the riſe of the water; and, after his leaving the ciſtern, another was not to go in until the water was free from motion. Could theſe things have been done, as I had projected, I could have recommended the foregoing table as ſufficiently complete: but I muſt obſerve, that beſide the men's being of different ſizes from what I had deſired, they were in too much haſte to be diſmiſſed (with another dram

after dreſſing); ſo that the water was not quite ſtill when they got into the ciſtern: neither could I perſuade all of them to lay themſelves down gently, much leſs to keep their heads under water ſo long a time as one ſecond: ſo that, in moſt of the obſervations, the ſurface of the water was far from being quite ſo ſtill, as to render the meaſures perfectly exact, I being obliged to catch them, as it were, by taking the mean height between the librations. Moreover, the great area of the ciſtern was no inconſiderable bar to the accuracy I expected. However, as I do not recollect experiments of this kind anywhere recorded, theſe, perhaps, may give ſome ſatisfaction to ſuch perſons, who may have the curioſity to deſire ſome knowlege on this ſubject. Were I to make any more obſervations of this kind, I would chuſe an upright parallelopiped, not above 18 or 20 inches in the ſide of the ſquare; into which the perſon ſhould let himſelf down by ſteps nailed to the ſide: for in ſo ſmall an area the motion of the water would ſooner ſubſide; neither would the librations be any thing near ſo large as on a ſmaller ſurface.

One of the reaſons, that induced me to make theſe experiments, was a deſire of knowing what quantity of fir or oak timber would be ſufficient to keep a man afloat in river or ſea water, thinking that moſt men were ſpecifically heavier than river or common freſh water; but the contrary appears from theſe trials: for, excepting the firſt and laſt, every man was lighter than his equal bulk of freſh water, and much more ſo than his equal bulk of ſea-water: conſequently, could perſons, who fall into water, have preſence of mind enough to avoid the fright

uſual on ſuch accidents, many might be preſerved from drowning; and a piece of wood, not larger than an oar, would buoy a man partly above water ſo long as he had ſpirits to keep his hold. Some things herein advanced will perhaps more readily appear from the following relation.

The Lords of the Admiralty have appointed, for the exerciſe of the ſcholars belonging to the royal academy at Portſmouth, a ſmall yacht; wherein, during the ſummer months, thoſe young gentlemen are taught the practice of working a veſſel at ſea, under the directions of one of the maſter-attendants, aſſiſted by eight or ten ſeamen. The laſt time this yacht was out, which was about the beginning of laſt October, one of the ſcholars was ordered to heave the lead. The youth was about thirteen years old, ſmall of his age, and far from being fat; as he was ſtepping on the gunnel, he fell over-board: the ſea was rough, and the yacht had great way; ſo that he was preſently at a conſiderable diſtance from the veſſel. The ſkiff was immediately let down; but the painter not being faſt, the rope run an end, and the ſkiff went adrift. One of the ſeamen jumpt over-board, got into the boat, brought her alongſide the veſſel, took in another man, and then went after the youth, whom they recovered, after he had been in the water more than half an hour. The young gentleman, relating the affair, ſaid, that as he could ſwim very little, and judging he ſhould ſink if he ſtrove againſt the waves, he turned on his back, and committed himſelf to their mercy. He kept himſelf perfectly calm; and obſerved, when a wave was likely to break over him, to hold his

breath, and to ſpurt out the water forced into his mouth. His hat, which happened to be tied by a piece of ſtring to one of his coat button-holes, he often held up with his hand, as a ſignal where he was. Juſt before the boat came up to him he began to be faint, his eyes became dim, and he thought himſelf on the verge of ſinking. This youth, who, by his prudence, ſaved himſelf from drowning, muſt, at that time, have been ſpecifically lighter than water.

VI. *An Inſtance of the Gut* Ileum, *cut thro' by a Knife, ſucceſsfully treated by Mr.* Peter Travers, *Surgeon, at* Liſbon. *Communicated by* John Huxham, *M.D. F.R.S.*

Liſbon, Auguſt 3d, 1756.

Read Jan. 27, 1757.

ANtonia Joſée da Coſta, one of the King's meſſengers, was attacked by two men, and, after receiving two blows on the head, was ſtabbed with a knife in the right hypogaſtric region, about three fingers breadth above the os pubis; the external wound being larger, as the knife was drawn obliquely towards the navel, and might be an inch and half in length, the perforation thro' the peritonæum about three quarters of an inch; the inteſtine ileum hanging out about ten or twelve inches, and quite pierced thro', the wound in the gut being large enough to admit my fore finger. After clearing the grumous blood with warm